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A SERVICE FOR INDUSTRY BUSINESS ENGINEERING AND RESEARCH
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Dear Sir:

Bids on several construction jobs at Sandia Laboratory (nuclear weapons engineering operations) have been invited by the USAEC's operations office at Albuquerque, N.M. Contractors may receive details on these jobs (which range from $50,000 to $950,000) from the USAEC at P.O. Box 5400, Albuquerque, N.M. (Other BIDS ASKED, CONTRACTS AWARDED, p. 4 this LETTER.)

Higher mill grade of uranium oxide produced is part of improved efficiency of operations of Northspan Uranium Mines, Ltd., according to E. B. Gillanders, company president. Dr. Gillanders, in a report, points out that in April some 442,000-lbs. of uranium oxide were produced as against 416,000-lbs. in January. During this period, tonnage treated was reduced from 259,000-tons in January from Northspan's Lacnor, Panel and Spanish American properties, to 219,000-tons in April from Lacnor and Panel only. (Spanish American, the company's smallest mine, was closed in April as an efficiency measure; about $225,000 was spent to put it on a care and maintenance basis.) Northspan has continued to meet its debt carrying charges, and is making progress in reducing its liabilities. On the basis of present operations, the company expects that all the general mortgage bonds will be retired by the due date of July 1, 1963. (Other Canadian uranium mines do not fare so well; p. 5 this LETTER for receivership details of Stanrock Uranium.)

Nuclear reactor fuel element shipment of 290 fifty-four pound rods has been made by AMF Atomics (Canada) Ltd., Port Hope, Ontario, to the Diorit research reactor unit, near Zurich, Switzerland. Arrangements for production of these elements had been made by Atomic Energy of Canada, Ltd., under a bilateral agreement signed with Switzerland in March 1958. The shipment was valued at about $400,000. (AMF also has long term contract with AECL to supply fuel elements for the Chalk River nuclear facilities, including NRX and NRU reactors.) (Other PRODUCT, PROCESS, INSTRUMENT NEWS, p. 3 this LETTER.)

International Conference on Application of Large Radiation Sources in Industry is scheduled for Sept. 5-11, 1959 in Warsaw. Under sponsorship of International Atomic Energy Agency, it will be the first international meeting on the subject and will emphasize applications to industrial chemical processes. About 20 U.S. papers will be read, with a committee set up by Oak Ridge Institute of Nuclear Studies first screening submissions. Final selection of papers however will be made by IAEA.

Medical Nuclear Consultants, Inc., is a new service set up in Washington, D.C., with Stanley H. Clark, radiation physicist, as president of the organization. Sponsors and potential sponsors of diagnostic, treatment and research programs--medical centers, hospitals, groups, etc.--may engage the organizations services on a continuing retainer or specific assignment basis, Mr. Clark pointed out. Serving the group are radiation therapists; reactor engineers; radiochemists; and others in the field of nuclear medicine. (Other BUSINESS NEWS, p. 2 this LETTER.)

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ATOMIC ENERGY BUSINESS NEWS...

NEW SPENDING AUTHORITY GIVEN USAEC: Some $230 million in new spending authority for fiscal 1960 will be provided the USAEC, in a bill unanimously approved by the Joint Committee on Atomic Energy last fortnight. The bill went beyond the Administration's request for $179 million by authorizing three additional reactor projects: (1) An $11 million advanced concept reactor with 15,000 kw power capacity and incorporating nuclear superheat. Reactor site will be decided upon by the USAEC. (2) A $15 million prototype power reactor with between 50,000 and 75,000 electrical kw power capacity, to be built by the USAEC for a local public power agency or a rural cooperative. (3) An $8 million research and development subsidy for a prototype reactor with power between 30,000 and 75,000 kw, construction of which would be financed by private industry. These three new projects are in addition to five new reactor projects proposed by the USAEC and approved by the JCAE: (1) A $20 million boiling water prototype plant of 50,000 kw capacity, to be built by private or public utility. (2) A $10 million reactor of 20,000 kw capacity to be built by the USAEC for a rural electric cooperative or local public power agency. (3) Some $14.5 million to be put up by the USAEC for research and development costs on a 30,000 kw gas cooled reactor to be built by High Temperature Reactor Development Associates, Inc. (4) A $4 million experimental reactor to be built at a USAEC site to produce process steam. (5) A $6 million experimental organic cooled reactor, to be built at a USAEC site. (The Committee also voted $5 million for modifying the Shippingport reactor of DuQuesne Light Co. to increase the plant's capacity from 60,000 kw to 150,000 kw.)

OIL INDUSTRY HEARS USES OF TRACERS AND NUCLEAR PHYSICS:-Radioisotopes and nuclear well logging are finding increasing use in the oil industry as papers presented at the Fifth World Petroleum Congress in New York last week indicated. Five Soviet physicists, in a paper prepared for delivery, disclosed that radioactive well logging is employed widely in exploring for gas and oil in the Soviet Union, and radioisotopes are also used to determine the technical condition of wells. The Soviet paper was read by a reporter as the U.S.S.R. withdrew from the Congress. A. H. Youmans, and C. Z. Zimmerman, of Well Surveys, Inc., Tulsa, Okla., described use of nuclear bombardment to produce artificial radioactivity as a means of indicating presence of oil.

LICENSING AGREEMENT SET: Nuclear power licensing agreement recently set up between General Electric Co. (Great Britain) and the German company Maschinen-fabrik-Augsburg-Nurnburg AG gives general manufacturing license to the German firm on all G.E. Co. nuclear patents, and establishes information exchange between the two companies on their nuclear work. The agreement runs for 10-years, during which Maschinen-fabrik will pay G.E. Co a capital sum (plus a service fee per kw of electrical output) on nuclear power plants it sells.

NEW BOOKS & OTHER PUBLICATIONS...

Double-Pulse Total-Absorption Fast Neutron Spectrometer. Spectrometer, as developed at National Bureau of Standards, for use in the 1-20 Mev energy range, is described in this NBS Technical Note (No. 1). PB-151360. 27 pages. Office of Technical Services, Wash. 25, D. C. (75¢).

Radioactive Fallout; A Two Year Summary Report, by C. L. Dunham, M.D., director, division of biology and medicine, USAEC. Statement presented before Joint Congressional Committee on Atomic Energy, May 5-8, 1959. 110 pages. No. TID-5550. Office of Technical Services, Wash. 25, D.C. ($1.25)

PEOPLE...in nuclear work...

Membership of the U.S. - EURATOM Joint Research and Development Board has now been set up with these members: For EURATOM, Jules Gueron, voting member; Ehrtan Ehringer; Pierre Kruys; Pierre Nacivet; Claude Ramadier; and Theodore Vogelaar. For the USAEC, Amasa S. Bishop, voting member; Marcus Rowden; John Ryan; Jarvis Schwennesen; and Nelson Sievering. (The Joint Board selects proposals for which contracts are given by EURATOM.)

NEW PRODUCTS, PROCESSES, INSTRUMENTS...

NEW PRODUCTS FROM MANUFACTURERS: Decade scaler, model DS-5B, is for use with Geiger, scintillation, or proportional detectors. It is said to provide 5 microsecond resolving time, and features 5 decade units for direct read-out, push-button electric reset, built-in elapsed time indicator, and choice of 10 predetermined counts. --Technical Associates, Burbank, Calif.

Model 49-33 count and time scaler combines a decimal count scaler with an electronic time scaler on a single chassis. It offers preset time to 1000 seconds, and resolving time of 1 microsecond. The instrument includes full range discriminator, precision fixed mercury pulse generator, and electrically reset four digit register. --Radiation Instrument Development Laboratory, Inc., 5737 So. Halsted St., Chicago 21, Ill.

Model 6362 and 6935 multiplier phototubes have ten dynode stages and feature potted bases for moisture and shock resistance, socket elimination and noise-free connections. The 6362 has silver magnesium dynodes, and the 6935 has cesium antimony dynodes; they are said to provide high gain at low operating voltages. Suggested uses are in scintillation probes, etc. --Allen B. DuMont Labs. Inc., Clifton, N.J.

New halogen tube area monitor handles readings from remotely located probes up to three miles distant, and feeds them to a central control panel with each probe feeding a single plug-in station indicator. Station indicators may be set in banks of 5. Each probe incorporates a built-in, sealed strontium-90 check source which may be operated from the central panel. --Tracerlab, Inc., Waltham, Mass.

PRODUCT NEWS: New prices of certain of its radioisotopes produced and distributed by Oak Ridge National Laboratory have been put into effect by the USAEC. Reductions include carbon-14, now $13 per mc (formerly $22 to $28 per mc depending upon quantity); chlorine-36, now 50¢ per mmc (formerly $1 per mmc); thallium-204, now $1 per mc (formerly $5 per mc up to 149 mc, and $750 per curie over 149 mc); iridium-192, now $6 per curie plus source selection charge of $40 (formerly $15 per curie for first two curies, then $2 per curie, and no source selection charge); and iron-59, now $30 per mc (formerly $50 per mc). Increases include calcium-45, now $6.50 per mc, formerly $5; copper-64, now 80¢ per mc, formerly 20¢; gold-198, now 6¢ per mc, formerly 2¢ per mc; sodium-24, now $7 per mc, formerly $2 per mc; and yttrium-90, now $3 per mc, formerly $2 per mc.

New series of radium standards has been added by the National Bureau of Standards, Wash. 25, D.C., to the list of radioactive samples it prepares and distributes. As offered by the Bureau's radioactivity section, for use in controlling industrial and scientific processes, a certification of the radium content accompanies each sample issued.

New rubberized Dacron fabric said to be capable of withstanding up to 100 million roentgens has been developed by the Aviation Products division of Goodyear Tire & Rubber Co., Akron, Ohio. It would be used in a nuclear powered dirigible, plans for which Goodyear has prepared and discussed with the Navy Department. Suggested for reactor shielding would be liquid synthetic rubber incorporating metallic boron. This would be poured into a lead lining.

Placed in operation last week at the University of Lovanium 15 miles south of Leopoldville, Belgian Congo, was a Triga type nuclear research reactor, as furnished by General Atomic division of General Dynamics Corp. The reactor has a steady state operation power level of 10-30 kw, and can be used intermittently at levels up to 100 kw. Elements are a solid homogeneous fuel-moderator alloy of uranium-zirconium hydride, clad in aluminum.

The steel sphere and heavy-walled concrete building enclosing it, which will house the nuclear portion of Consolidated Edison Co.'s Indian Point, N.Y., nuclear power plant, is to be approved by the USAEC. The Commission's advisory committee on reactor safeguards termed it "most nearly complete containment...in any reactor project to date". Contractors on the plant, which will produce 275,000 kw of electricity using conventional and nuclear fuels in combination, are Babcock & Wilcox, and Vitro Corp. of America.

MANUFACTURERS' LITERATURE: Revised price list of its rare earth oxides and salts, with a number of the purified rare earths greatly reduced, is now available from Nuclear Corp. of America's research chemicals division, 170 W. Providencia St., Burbank, Calif.

ATOMIC ENERGY CONTRACT NEWS...

BIDS ASKED: Bids have been invited by E. I. du Pont de Nemours & Co., Aiken, S. C., for construction and installation at the USAEC's Savannah River Plant of four waste storage tanks each with capacity of 1.3 million gallons. Du Pont is prime contract operator for the Commission of the Savannah River Plant, near Aiken.

PROPOSALS MADE: A total of 63 firms and groups, from the U. S. and European countries, have to date submitted proposals for research and development projects under the U.S. EURATOM power development program. Thirteen proposals came from firms in Belgium; 16 from France; 4 from Germany; 17 from Italy; 1 from Switzerland; 3 from Holland; and 19 from the U.S. More are anticipated, as nearly 150 letters of intent were submitted. Objective of the development program is construction in the six EURATOM countries in the next 4 to 6 years of nuclear power plants with generating capacity of 1,000,000 kw of electrical energy. This research and development phase contemplates the expenditure of $100 million over a 5-year period with U.S. and EURATOM each contributing half this amount; it is separate from construction proposals invited by EURATOM, and which are to be submitted by Sept. 1, 1959 or earlier. (First letters of intent have come into EURATOM's Belgium office from European groups interested in constructing nuclear power plants under this EURATOM program, it is understood. Said to have filed intentions were a group of Dutch utilities; Electricite de France and a Belgium utility combine known as Centre Nucleaire Ardenne; a power company in Berlin; and a group of utilities in the Hanover region.)

CONTRACTS AWARDED: Research contract to simulate certain effects of nuclear weapons on materials has been awarded Technical Operations, Inc., Burlington, Mass., by the Air Force's materials laboratory at Wright Air Development Center, Dayton, Ohio. Studies will involve mainly the use of laboratory scale models.

Nuclear research center will be built for the Turkish government by AMF Atomics division of American Machine & Foundry Co., New York, under $3 million contract recently received by AMF. The contract calls for AMF to design and construct a 1 megawatt pool type nuclear reactor, associated equipment, and all supporting laboratories. Site of the research center which will be under jurisdiction of the Turkish Atomic Energy Commission, will be near Istanbul airport overlooking the Sea of Marmara.

Under a $128,000 research contract held by Union Carbide Metals Co. division of Union Carbide Corp., with the USAEC, the use of columbium-clad uranium carbide nuclear reactor fuel will be examined for suitability in high-temperature nuclear reactors. Superior strength and better thermal conductivity of the carbide, as compared with uranium dioxide currently used in high temperature reactors, recommend it for this purpose. Union Carbide people will first determine characteristics of the new fuel, then fabricate and test it under operating conditions in a nuclear reactor.

ATOMIC ENERGY PATENT & TRADE-MARK DIGEST...

PATENTS ISSUED May 19, 1959 to PRIVATE ORGANIZATIONS: (1) Process for producing an oxygen-free uranium chloride. M. J. Arnoff, inventor. No. 2,887,356 assigned to Horizons Titanium Corp., Princeton, N.J. (2) Electron accelerator for irradiation. R. M. Emanuelson, inventor. No. 2,887,583 assigned to High Voltage Engineering Corp., Cambridge, Mass. (3) Electron irradiation apparatus. J. C. Nygard, inventor. No. 2,887,584 assigned to Hign Voltage Engineering Corp., Cambridge, Mass.

PATENTS ISSUED May 19, 1959 to GOVERNMENTAL ORGANIZATIONS: (1) Method of preparing protactinium values. L. I. Katzin, R. G. Larson, R. C. Thompson, Q. Van Winkle, inventors. No. 2,887,355 assigned to USAEC. (2) Dry fluorine separation method. G. T. Seaborg, J. W. Gofman, R. W. Stoughton, inventors No. 2,887,357 assigned to USAEC. (3) Large scale method for production and purification of curium. G. H. Higgins, W. W. T. Crane, inventors. No. 2,887,358 assigned to USAEC. (4) Method of removing uranium deposits from copper and copper alloy surfaces. H. W. Winkler, J. W. Morfitt, T. H. Little, inventors No. 2,887,373 assigned to USAEC.

PATENTS ISSUED May 26, 1959 to PRIVATE ORGANIZATIONS: (1) Nuclear spectroscopy well logging. S. B. Jones, W. E. Meyerhoff, inventors. No. 2,888,568 assigned California Research Corp., San Francisco, Calif. (2) Radioactive bore hole logging (beta ray detector). S. B. Jones, inventor. No. 2,888,569 assigned to California Research Corp., San Francisco, Calif. (3) Radioactivity measuring. R. P. Mazzagatti, O. D. Stephens, A. S. Conners, inventors. No. 2,888,571 assigned to The Texas Co., New York, N.Y.

ATOMIC ENERGY FINANCIAL NEWS...

PUBLIC STOCK OFFERING TO BE MADE: The public stock offering of Technical Operations, Inc., Burlington, Mass. (this LETTER, May 12, 1959 p. 5) will be made through an underwriting group headed by Bear, Stearns & Co., the firm has advised the SEC. Some 75,000 common shares will be offered. About $250,000 of the proceeds of the stock sale will be used for additions and improvements to the company's principal building in Burlington during 1959 and 1960, plus $50,000 for an adjacent building for radiographic research and manufacture. Approximately $300,000 of the proceeds will go into two subsidiaries, for equipment and working capital. Balance of the proceeds will be for general corporate purposes. (Principal business of Technical Operations is research and development in nuclear and other fields. It also manufactures radiographic isotope equipment, and through subsidiaries produces transistorized power supplies and processes Kodachrome color film. Long range aim is to expand manufacture of its own products.)

STOCK SPLIT PLANNED BY NUCLEAR INSTRUMENT FIRM: A two-for-one stock split of the company's common stock is planned by Baird-Atomic, Inc., Cambridge, Mass., manufacturer of nuclear and other electronic instrumentation and devices. Stockholders will be asked at a special meeting June 19 to pass on the proposal, as well as contemplated action to increase the company's authorized shares, preliminary to new equity financing.

RECEIVER APPOINTED FOR CANADIAN URANIUM PRODUCER: Stanrock Uranium Co., unable to arrange continuing bank loans, has been placed into receivership by the Supreme Court of Ontario. Montreal Trust Co., an affiliate of the Royal Bank, was appointed receiver and manager of the company by the court. Montreal Trust and Chase Manhattan, trustees of Stanrock's first mortgage bonds, of which $29 million are outstanding, had asked for the receivership. Payments from Eldorado Mining & Refining for uranium precipitates delivered under Stanrock's contract are being made to the Royal Bank against a $2.5 million loan on which Stanrock is in arrears. Earlier this year Stanrock bondholders had approved deferment of two sinking fund payments due Feb. 1 and Aug 1, 1959 of $2.9 million each. (While the company now is said to be showing an operating profit of between $200,000 and $300,000 per month, it claimed that is was not able to develop its property fast enough to meet interest and amortization charges, and at the same time pay off its bank loan.)

NEW STOCK OFFERING PLANNED: Aerojet-General Corp., Azusa, Calif., a subsidiary of which produces nuclear devices, has filed registration with the SEC for 175,000 shares of common stock to be offered for public sale through an underwriting group headed by Kidder, Peabody & Co. Proceeds of the sale will be used to repay $14 million of advances from General Tire & Rubber Co., by whom it is controlled. The company is said to be negotiating the purchase of manufacturing facilities in Southern California at an anticipated cost of $4,700,000 the funds for which are to be advanced by General Tire.

HIGH URANIUM PRODUCTION RATE REFLECTED IN CANADIAN GOVERNMENT OPERATIONS: Eldorado Mining & Refining, Ltd., the Canadian government-owned uranium mining, milling, and marketing company, had record sales in 1958 of $39,522,517 compared with $32,053,068 in 1957. This did not include the uranium oxide concentrates which Eldorado purchases from other producers under contract, for sale to the U.S. and the U.K. Such sales totaled $246,904,045 in 1958 compared with $98,985,240 in 1957. (In terms of dollar value, uranium is Canada's leading metal with exports exceeded in value only by pulp and paper products and wheat.)

URANIUM SHARES AT NEW LOW FOR 1959 ON CANADIAN EXCHANGES: Touched off by Stanrock Uranium's receivership, a wave of selling brought many uranium issues to new lows on the Toronto and Montreal Exchanges. In addition to fall off in Stanrock shares, the company's bonds dropped also, to below the 50¢ level. Easson's uranium index, the uranium market indice issued by J. M. Easson & Co., Toronto, came to below 145 in the last fortnight, a new 1959 low, and below the 1958 low of 169.5.

Sincerely,

The Staff,
ATOMIC ENERGY NEWSLETTER

June 9, 1959